

WILDLIFE MANAGEMENT UNIT 16 - MANTI-NEBO

SUBUNIT 16C - MANTI-NEBO, MANTI SOUTH

Boundary Description

Sanpete, Emery, and Sevier Counties - Boundary begins at the junction of SR-10 and SR-31 at Huntington; then south on SR-10 to I-70; west on I-70 to US-89 at Salina; north on US-89 to SR-31 at Fairview; southeast on SR-31 to SR-10 at Huntington and beginning point.

Management Unit Description

Management subunit 16C covers both the east and west slopes of the Wasatch Plateau that lie within the above listed unit boundaries. The western portion of this unit, which includes the areas from Fairview south to about Mayfield was monitored in 2007. The eastern side of this management unit is monitored as part of the Southeastern Region rotation that was last sampled in 2004, and will be sampled again in 2009. The range trend studies on the western portion of management subunit 16C monitor several chained and seeded pinyon-juniper sites in the foothill ranges above Ephraim, Manti, and Mayfield. Additional studies monitor mountain brush, and sagebrush-grass types, as well as a high elevation meadow.

As with management subunit 16B, the availability of winter range and its condition and productivity have always been an issue on these important deer herd units in central Utah. Due to location and access, a large number of hunters use these units, and they continue to contribute an important portion of the yearly statewide deer harvest. A large portion of the critical winter range in subunit 16C is found along highway corridors or adjacent to agricultural areas. As a result, two issues facing wildlife managers in this unit are crop depredation and highway mortality. Many of the range trend studies monitor Utah Division of Wildlife Resources-owned wildlife management areas (WMAs) in this unit that were purchased to try to minimize the effects of these two factors on wildlife herds. Habitat management objectives for this unit include the following: working with federal agencies, local governments, and private landowners to achieve long-term habitat protection and preservation; carrying out habitat improvements such as re-seedings, controlled burns, and water developments; and providing long-term habitat quantity and quality sufficient to maintain wildlife population objectives.

Big Game Management Objectives

The current management objective is to maintain a herd of 38,000 wintering deer for management units 16B and 16C. The estimated herd size has grown from 26,000 deer in 2002 to 32,700 in 2005. The buck:doe ratio has averaged 11.3:100 during the three year period from 2003 to 2005, slightly below the objective of 15 to 20 bucks per 100 does (Hersey and McLaughlin 2006). From 1999 to 2005 the fawn:doe ratio has averaged 66:100.

The current elk management objective is to maintain a winter herd population of 12,000. From 2002 to 2005 the estimated population has ranged from 8,800 to 11,100 (Hersey and McLaughlin 2006)

Range Trend Studies

Fourteen studies were originally established on the west portion of the subunit in 1989, and one new one was established in 2007. Most of the studies were reread in 1997 and 2002. Thirteen of the studies were read in 2007, and two were suspended.

SUMMARY

WILDLIFE MANAGEMENT UNIT 16C - MANTI-NEBO, MANTI-SOUTH

Community types

The studies for subunit 16C are found in areas from Fairview south to Mayfield. Fourteen trend studies were established in this management unit in 1989, and one in 2007. Julius Pasture (16C-10) was not read in 2002 and 2007 due to access problems. In 2007, at the request of the region biologist Bald Mountain (16C-4) was suspended. Nine of the 13 studies that were sampled in 2007 are pinyon-juniper sites that have been chained and seeded. Some of these showed an increasing overstory of pinyon, juniper, and oak. Of the remaining four, two studies sample mountain brush communities, one study samples a sagebrush-grass community, and one samples an antelope bitterbrush-Wyoming big sagebrush community.

Precipitation

Precipitation data from weather stations at Ephraim and Manti show alternating wet and dry cycles from 1983 to 2007. Precipitation is the single most important factor determining the type and productivity of vegetation of an area (Holechek 2004). The average annual precipitation for the subunit has not been below 75% (drought conditions) (Figure 1). Spring precipitation was less than 75% of normal in 2002 and 2007 (Figure 2). Spring precipitation is important for shrub, perennial grass, and forb recruitment. Fall precipitation, which benefits cheatgrass (*Bromus tectorum*), was less than 75% of normal in 1995, 1999, and 2003.

Browse

The cumulative browse trend showed decreasing conditions from 1997 to 2007 (Figure 3). This decline was attributed to changes in density, recruitment of young, decadence, and poor plant vigor of the preferred browse population. Pleasant Creek (16C-38) and Cove Creek (16C-39) were the studies in the subunit with basin big sagebrush. The average basin big sagebrush density increased 24% in 2002, and decreased 39% in 2007 (Figure 4). The subunit average cover increased to near 7% in 2002 and changed little in 2007 (Figure 5). The average decadence decreased to 5% in 2002, and increased to 34% in 2007 (Figure 6).

Mountain big sagebrush was sampled at Willow Creek (16C-2), North Manti Face (16C-3), Cane Valley (16C-5), Mayfield Mountain Face (16C-7), Pole Canyon Oak (16C-9), and Cove Creek. The average mountain big sagebrush density for the subunit increased 16% in 2002 and decreased 31% in 2007 (Figure 4). Average cover was stable at

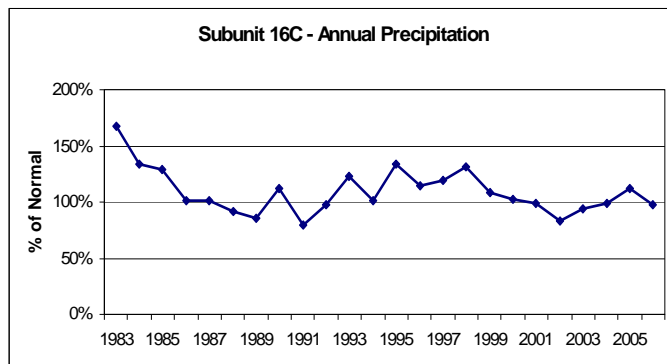


Figure 1. Percent of normal annual precipitation for subunit 16C. Data were collected at the Manti and Ephraim weather stations (Utah Climate Summaries 2007).

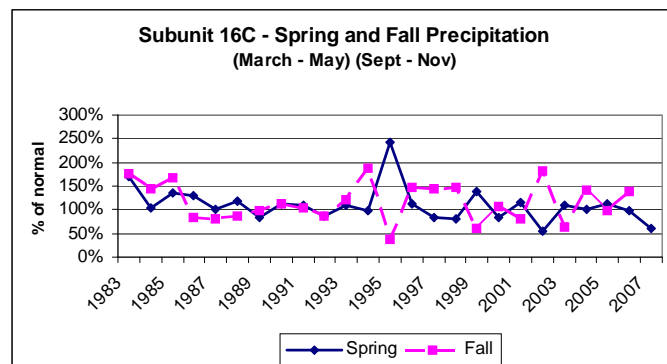


Figure 2. Spring and fall precipitation for subunit 16C. Data were collected at the Manti and Ephraim weather stations (Utah Climate Summaries 2007).

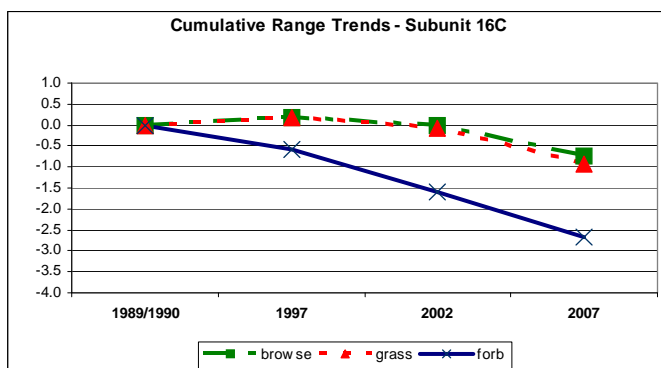


Figure 3. Cumulative range trends for subunit 16C.

2%-3% in 2002 and decreased to 1% in 2007 (Figure 5). Average decadence increased to 34% in 2002, and 42% in 2007 (Figure 6). Wyoming big sagebrush was sampled at Black Hill (16C-6) and Manti Dump (16C-12). The average Wyoming big sagebrush density for the subunit decreased 31% in 2002 and 24% in 2007 (Figure 4). Average cover decreased to 4% in 2002 and 3% in 2007 (Figure 5). The average decadence increased to 34% in 2002, and decreased to 27% in 2007 (Figure 6). Black sagebrush was sampled at Manti Face Chaining (16C-1), North Manti Face, Black Hill, Mayfield Mtn. Face, Manti Dump, and Olsen Canyon (16C-45). The average black sagebrush density increased 26% in 2002 and decreased 28% in 2007 (Figure 4). Average cover was stable at 2% in all samples (Figure 5). The average decadence increased to 12% in 2002 and 37% in 2007 (Figure 6).

Grass

The cumulative grass trend for subunit 16C was stable from 1989 to 1997, and declined in 2002, and 2007 (Figure 3). The nested frequency of perennial grass for subunit 16C decreased 16% in 2002 and increased 19% in 2007 (Figure 7). However, the average cover was 12% in 1997 and 2002, and increased to 14% in 2007 (Figure 8). Cheatgrass was sampled at all thirteen studies in 2007. The average nested frequency of cheatgrass decreased 70% in 2002 and increased five-fold in 2007 (Figure 7). The average cover of cheatgrass decreased from 2% in 1997 to 1% in 2002, and increased to 3% in 2007 (Figure 8). Bulbous bluegrass was sampled at Cove Creek (16C-39) in 1997, at Cove Creek and Manti Dump (16C-12) in 2002, and at Cove Creek, Manti Dump, Cane Valley (16C-5), Black Hill (16C-6), and Pleasant Creek (16C-39) in 2007. The average nested frequency of bulbous bluegrass increased 44% in 2002 and decreased 10% in 2007 (Figure 7). The average cover of bulbous bluegrass increased from 1% in 1997 to 4% in 2002, and decreased to 3% in 2007 (Figure 8). A common trend throughout the unit in 2002 was declining nested frequency values for herbaceous species (Figure 7). The decline could be due to the near drought conditions experienced during the fall of 2001, and drought conditions in the spring of 2002 (Utah Climate Summaries 2007).

Forb

The cumulative perennial forb trend has steadily declined from 1989 to 2007. The nested frequency for perennial forbs decreased 37% in 2002 and increased 17% in 2007 (Figure 7). The average cover decreased from 3% in 1997 to 2% in 2002 and 2007 (Figure 8).

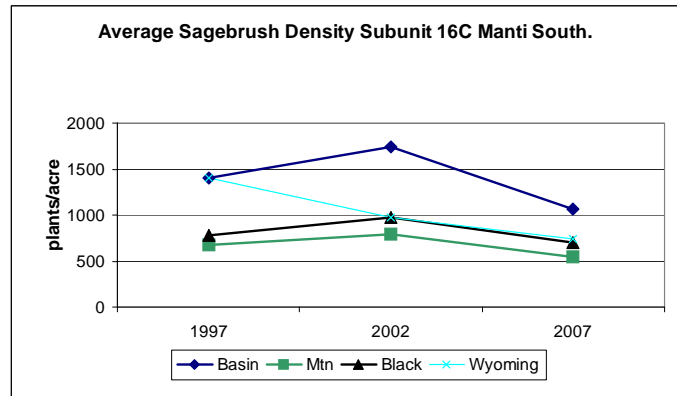


Figure 4. Average density of basin big, mountain big, Wyoming big, and black sagebrush for subunit 16C.

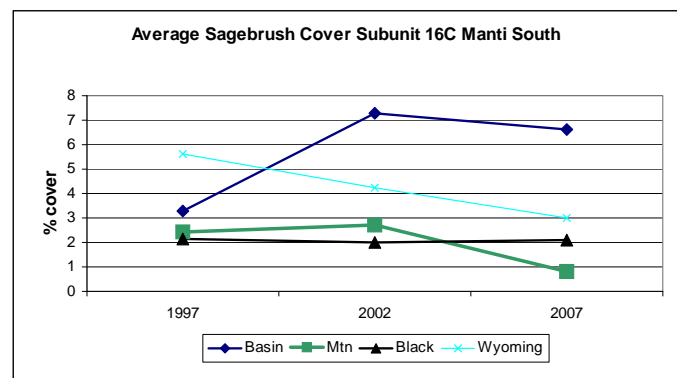


Figure 5. Average cover of basin big, mountain big, Wyoming big, and black sagebrush for subunit 16C.

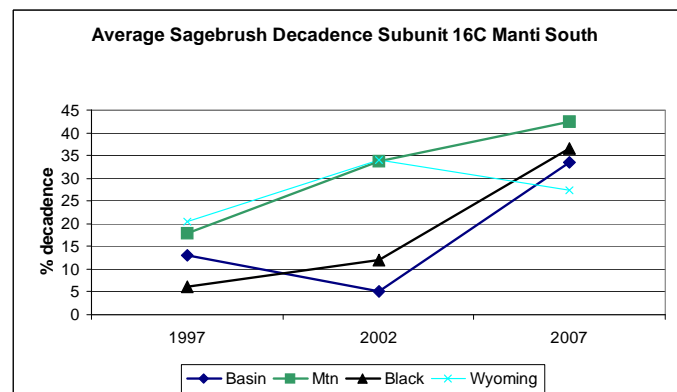


Figure 6. Average decadence for basin big, mountain big, Wyoming big, and black sagebrush for subunit 16C.

Desirable Components Index

The DCI scores are divided into three categories based on ecological potentials, which include low, mid-level, and high. The average Desirable Components Index (DCI) rating decreased from fair-poor in 1997 to poor in 2002, and very poor in 2007 for the mid-level potential scale studies (Figure 9). For the low potential scale studies, the DCI rating remained fair from 1997 to 2007.

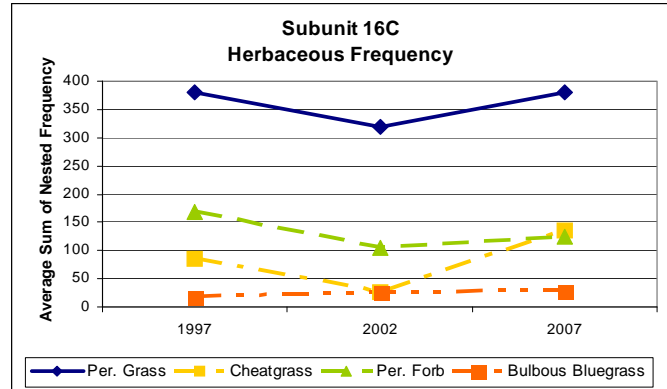


Figure 7. Average herbaceous frequency for subunit 16C.

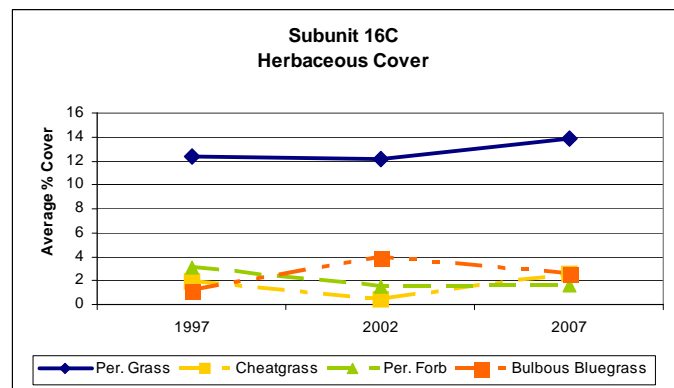


Figure 8. Average herbaceous cover for subunit 16C.

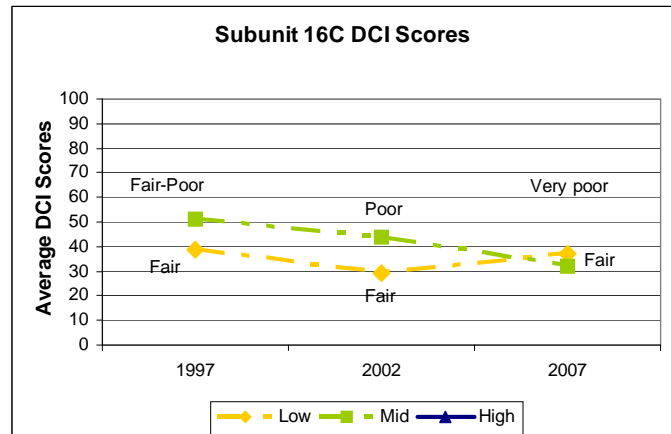


Figure 9. Average Desirable Components Index (DCI) score for subunit 16C. DCI scores are categorized based on ecological potentials that include: high, mid-level, and low.